

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

1713

In re application of:  
Paul EUSTACE et al.

Appl. No. 10/049,604

Confirmation No. 9719

Filed: May 8, 2002

For: MELT-PROCESSABLE  
THERMOPLASTIC  
COMPOSITIONS

Art Unit: 1713

Examiner: Unassigned

Atty. Docket No. 31229-178457

Customer No.

**26694**

PATENT TRADEMARK OFFICE

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Applicants present herewith copies of the references cited on the enclosed 1449 form [2 pages] for the Examiner's review and citation during the prosecution of the above-identified application.

The following European references are enumerated on the 1449: English language abstracts for the following were obtained from Dialogue and are attached:

EP 0,522,351B,

EP 0,216,139B,

EP 0,277,874B,

EP 0,279,724B,

EP 0,528,196B,

EP 0,570,782B

EP 0,491,266A

Also attached hereto are translations of claim 1 of each of the following references [which are cited on the 1449 form];

WO 00/78663

DE 19844716

DE 19844657

DE 19725984

DE 4232501

the translations were provided by the applicants' British Representatives and appear in APPENDIX A.

No English language counterpart of Canadian Patent application 2194092A, which is cited on the 1449 form, was locatable; accordingly an English Language Abstract of the French case corresponding counterpart of Canadian Patent application 2194092A is enclosed.

The requisite fee is enclosed. If a greater or lesser fee is required, please charge or credit Deposit Account No. 22-0261 accordingly and notify the undersigned.

#### **Claims---APPENDIX A**

**WO 00/78663**

1. Modified impact-resistant polymethacrylate moulding material characterized by
  - a Vicat softening temperature according to ISO 306 (B 50) of at least 90°C,
  - a notched bar impact strength KSZ (Charpy) according to ISO 179/1eA of at least 3.0 kJ/m<sup>2</sup> at 23°C,
  - and
  - a flowability MVR (230°C/3.8 kg) according to ISO 1133 of at least 11 cm<sup>3</sup>/10 min,which can be obtained by mixing
  - a) 80 to 98 %wt of a modified impact-resistant polymethacrylate moulding material with
  - b) 20 to 2 %wt of a low molecular polymethacrylate moulding materialin a molten state, wherein the impact resistant moulding material is 70 to 99 %wt composed of a matrix consisting of 80 to 100 %wt of radically polymerized methyl

methacrylate units and optionally 0 to 20 %wt of other radically polymerizable comonomers, and contains 1 to 30 %wt of an impact resistance modifying agent, and the low molecular polymethacrylate moulding material is 80 to 100 %wt composed of radically polymerized methyl methacrylate units and 0 to 20 %wt of other radically polymerizable comonomers, and has a viscosity number ( $\eta_{sp}/c$ ) of 25 to 35 ml/g when measured in chloroform in accordance with ISO 1628 Part 6.

#### **DE 19844716**

1. A laminated extruded synthetic resin sheet comprising a methyl methacrylate resin, obtainable by laminating resin layers (B) on both surfaces of a resin layer (A) by a multilayer extrusion process, the resin layer (A) being obtainable by uniform dispersion of 0 to 50 parts by weight of a rubber-like polymer in 100 parts by weight of a methyl methacrylate resin, and the resin layer (B) being obtainable by uniform dispersion of 1 to 50 parts by weight of insoluble methyl methacrylate resin particles with a weight average of particle size of 1 to 100  $\mu\text{m}$  in 100 parts by weight of a base resin comprising 100 parts by weight of a methyl methacrylate resin and 0 to 70 parts by weight of a rubber-like polymer.

#### **DE 19844657**

1. Light-diffusing laminated synthetic resin sheet obtainable by laminating a resin layer (B) on at least one surface of a resin layer (A), the resin layer (A) being obtainable by uniform dispersion of 0.1 to 10 parts by weight of a light-diffusing agent with a weight average of particle size of 1 to 10  $\mu\text{m}$  in 100 parts by weight of a base resin comprising 100 parts by weight of a methyl methacrylate resin or styrene resin and 0 to 30 parts by weight of a rubber-like polymer, and the resin layer (e) being obtainable by uniform dispersion of 3 to 70 parts by weight of a rubber-like polymer in 100 parts by weight of a methyl methacrylate resin or styrene resin, essentially without dispersion of inorganic particles.

#### **DE 19725984**

1. Process for the production of acrylic surfaces with high abrasion and scratch resistance, characterized in that a gel coat (12) containing a specific concentration of homogeneously dispersed nano-scale particles is first applied to one part of a mould (11, 12) used for the production of an acrylic sheet, and the mould is then filled with liquid prepolymer for production of the acrylic sheet, which is then cured to give an acrylic sheet formed from the prepolymer with a coating formed from the gel-coat layer.

#### **DE 4232501**

1. Composite in the form of a dispersion composite with at least one dispersed phase and a matrix phase receiving the dispersed phase, characterized in that the dispersed phase consists of cured thermosetting plastics in the form of preferably particulate inclusions, and in that the preferably polymeric matrix phase wets the dispersed phase well and adheres to it well in the solid state so that the dispersed phase is bonded by the matrix phase.

#### **WO 00/78663**

1. Modified impact-resistant polymethacrylate moulding material characterized by  
a Vicat softening temperature according to ISO 306 (B 50) of at least 90°C,  
a notched bar impact strength KSZ (Charpy) according to ISO 179/1eA of at least 3.0 kJ/m<sup>2</sup> at 23°C,  
and  
a flowability MVR (230°C/3.8 kg) according to ISO 1133 of at least 11 cm<sup>3</sup>/10 min,  
which can be obtained by mixing  
a) 80 to 98 %wt of a modified impact-resistant polymethacrylate moulding material  
with  
b) 20 to 2 %wt of a low molecular polymethacrylate moulding material

in a molten state, wherein the impact resistant moulding material is 70 to 99 %wt composed of a matrix consisting of 80 to 100 %wt of radically polymerized methyl methacrylate units and optionally 0 to 20 %wt of other radically polymerizable comonomers, and contains 1 to 30 %wt of an impact resistance modifying agent, and the low molecular polymethacrylate moulding material is 80 to 100 %wt composed of radically polymerized methyl methacrylate units and 0 to 20 %wt of other radically polymerizable comonomers, and has a viscosity number ( $\eta_{sp}/c$ ) of 25 to 35 ml/g when measured in chloroform in accordance with ISO 1628 Part 6.

#### **DE 19844716**

1. A laminated extruded synthetic resin sheet comprising a methyl methacrylate resin, obtainable by laminating resin layers (B) on both surfaces of a resin layer (A) by a multilayer extrusion process, the resin layer (A) being obtainable by uniform dispersion of 0 to 50 parts by weight of a rubber-like polymer in 100 parts by weight of a methyl methacrylate resin, and the resin layer (B) being obtainable by uniform dispersion of 1 to 50 parts by weight of insoluble methyl methacrylate resin particles with a weight average of particle size of 1 to 100  $\mu\text{m}$  in 100 parts by weight of a base resin comprising 100 parts by weight of a methyl methacrylate resin and 0 to 70 parts by weight of a rubber-like polymer.

#### **DE 19844657**

1. Light-diffusing laminated synthetic resin sheet obtainable by laminating a resin layer (B) on at least one surface of a resin layer (A), the resin layer (A) being obtainable by uniform dispersion of 0.1 to 10 parts by weight of a light-diffusing agent with a weight average of particle size of 1 to 10  $\mu\text{m}$  in 100 parts by weight of a base resin comprising 100 parts by weight of a methyl methacrylate resin or styrene resin and 0 to 30 parts by weight of a rubber-like polymer, and the resin layer (e) being obtainable by uniform dispersion of 3 to 70 parts by weight of a rubber-like polymer in 100 parts by weight of a methyl methacrylate resin or styrene resin, essentially without dispersion of inorganic particles.

**DE 19725984**

1. Process for the production of acrylic surfaces with high abrasion and scratch resistance, characterized in that a gel coat (12) containing a specific concentration of homogeneously dispersed nano-scale particles is first applied to one part of a mould (11, 12) used for the production of an acrylic sheet, and the mould is then filled with liquid prepolymer for production of the acrylic sheet, which is then cured to give an acrylic sheet formed from the prepolymer with a coating formed from the gel-coat layer.

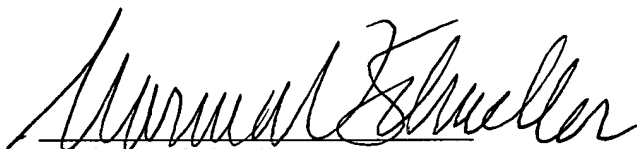
**DE 4232501**

1. Composite in the form of a dispersion composite with at least one dispersed phase and a matrix phase receiving the dispersed phase, characterized in that the dispersed phase consists of cured thermosetting plastics in the form of preferably particulate inclusions, and in that the preferably polymeric matrix phase wets the dispersed phase well and adheres to it well in the solid state so that the dispersed phase is bonded by the matrix phase.

Respectfully submitted,

Date:

July 1 2004



Marina V. Schneller

Registration No. 26,032

VENABLE

P.O. Box 34385

Washington, D.C. 20043-9998

Telephone: (202) 344-4000

Telefax: (202) 344-8300

Please type a plus sign (+) inside this box →



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 2

### Complete if Known

Application Number	10/049,604
Filing Date	May 8, 2002
First Named Inventor	Paul EUSTACE et al.
Group Art Unit	1712
Examiner Name	BUTTNER, DAVID J.
Attorney Docket Number	31229-178457

### U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	A1	6,042,945		MAEKAWA	03-28-2000	
	A2	5,621,028		LICHTENSTEIN et al.	04-15-1997	
	A3	4,268,549		FINK et al.	05-19-1981	

### FOREIGN PATENT DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sub>8</sub>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
	A4	EP	0 342 283	B1		11-23-1989		
	A5	EP	0 453 198	B1		10-23-1991		
	A6	EP	0 522 351	B1		01-13-1993		X
	A7	EP	0 571 918	B1		12-01-1993		
	A8	EP	0 781 808	B1		07-02-1997		
	A9	EP	0 881 261	A1		12-02-1998		
	A10	WO	99/12986	A1		03-18-1999		
	A11	WO	00/08098	A1		02-17-2000		
	A12	WO	00/24825	A1		05-04-2000		
	A13	WO	00/29480	A1		05-25-2000		
	A14	WO	00/63289	A1		10-26-2000		X
	A15	GB	2 233 979	A		01-23-1991		
	A16	EP	0 189 279	B1		07-30-1986		
	A17	EP	0 458 520	A2		11-27-1991		
	A18	EP	0 465 049	A2		01-08-1992		
	A19	EP	0 491 266	A2		06-24-1992		X
	A20	EP	0 495 593	A1		07-22-1992		
	A21	EP	0 216 139	B1		04-01-1987		X
	A22	EP	0 270 865	B1		06-15-1988		
	A23	EP	0 277 874	B1		08-10-1988		X
	A24	EP	0 279 724	B1		08-24-1988		X

Examiner  
Signature

Date  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

**VENABLE**  
ATTORNEYS AT LAW

Please type a plus sign (+) inside this box →

+

JUL 0 1 2004

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 2 of 2

### Complete if Known

Application Number	10/049,604
Filing Date	May 8, 2002
First Named Inventor	Paul EUSTACE et al.
Group Art Unit	1712
Examiner Name	BUTTNER, DAVID J.
Attorney Docket Number	31229-178457

### FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sub>6</sub>
		Office 3	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
	A25	EP	0 390 146	B1		10-03-1990		
	A26	EP	0 494 534	B1		07-15-1992		
	A27	EP	0 522 791	B1		01-13-1993		
	A28	EP	0 528 196	B1		02-24-1993		X
	A29	EP	0 654 454	A1		05-24-1995		
	A30	EP	0 776 915	B1		06-04-1997		
	A31	EP	0 897 954	A1		02-24-1999		
	A32	EP	0 992 540	A1		04-12-2000		
	A33	WO	99/65964	A1		12-23-1999		X
	A34	EP	1 162 217	A1		12-12-2001		
	A35	WO	01/62843	A2		08-30-2001		
	A36	WO	01/57102	A1		08-09-2001		
	A37	WO	01/57133	A1		08-09-2001		X
	A38	EP	1 087 000	A1		03-28-2001		
	A39	EP	1 086 966	A1		03-28-2001		
	A40	EP	1 106 649	A1		06-13-2001		
	A41	EP	1 142 951	A1		10-10-2001		
	A42	WO	00/78863	A2		12-28-2000		X
	A43	WO	01/10936	A1		02-15-2001		
	A44	DE	198 44 716	A1		04-08-1999		
	A45	DE	197 25 984	A1		12-24-1998		
	A46	DE	42 32 501	A1		03-31-1994		
	A47	EP	0 570 782	B1		11-24-1993		X
	A48	EP	1 022 115	A1		07-26-2000		
	A49	GB	2 178 746	B1		02-18-1987		
	A50	CA	2194092A	A1		6-29-1997		X

### OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>

Examiner  
Signature

Date  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.